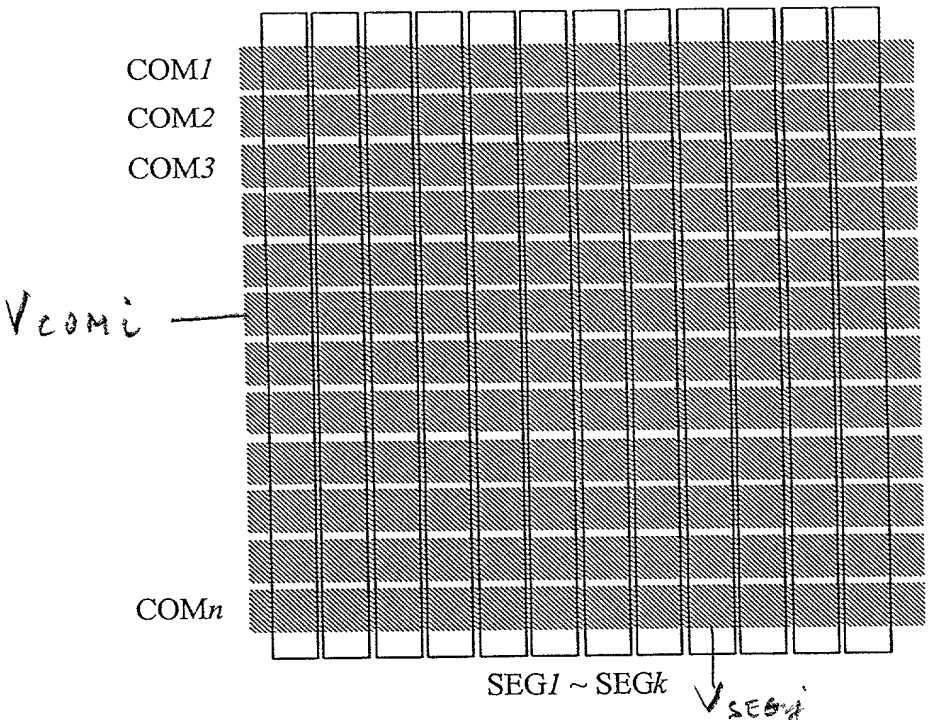



Fig. 1 A see through view of a LCD panel and its ITO electrodes

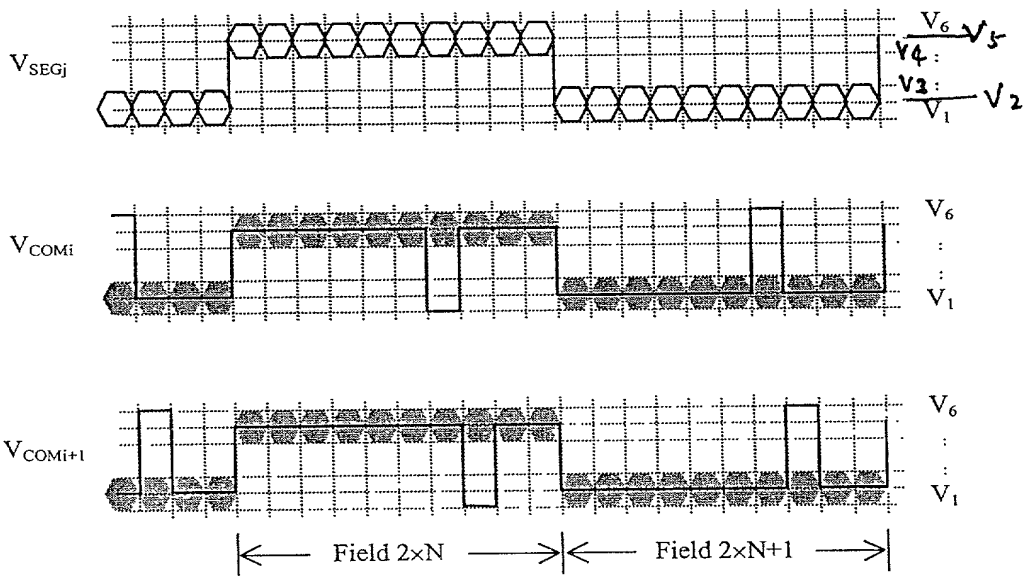
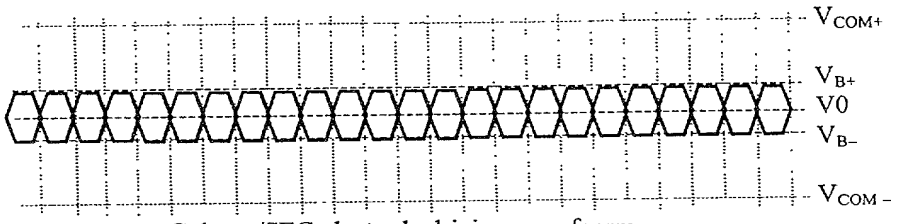
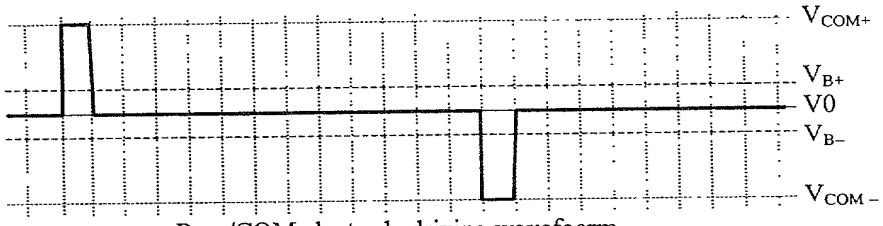



Fig. 2a IAPT driving Wave forms for COM electrodes and SEG electrodes




Column/SEG electrode driving wavefoerm




Row/COM electrode driving wavefoerm

Fig. 2b APT driving Wave forms for COM electrodes and SEG electrodes

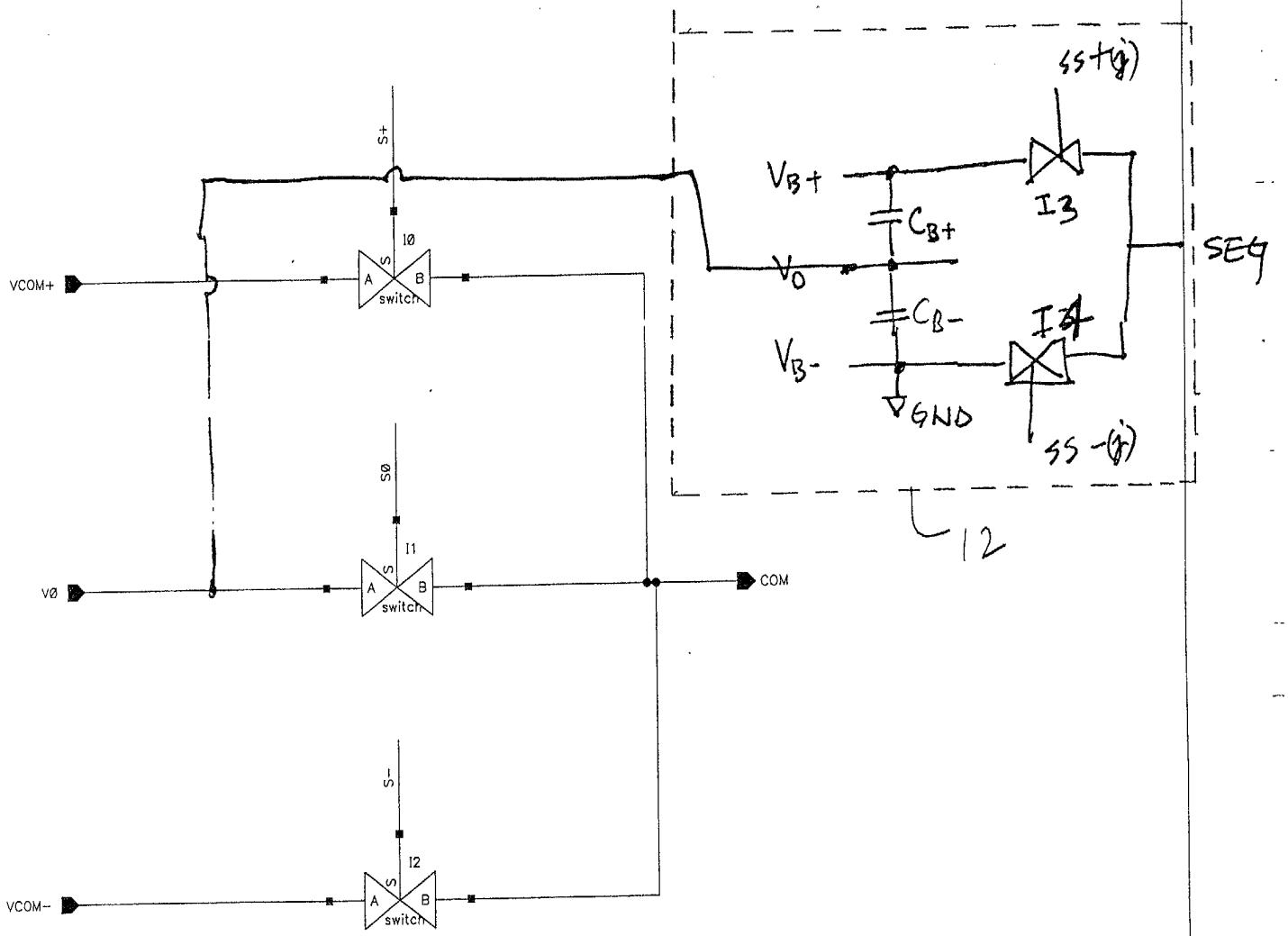

S+
I0
VCOM+
S
A
B
switch
S0
I1
V0
COM
S-
I2
VCOM-
VB+
CB+
V0
CB-
VB-
GND
SS+(j)
I3
I4
SS-(j)
SEG
12

Fig. 3a

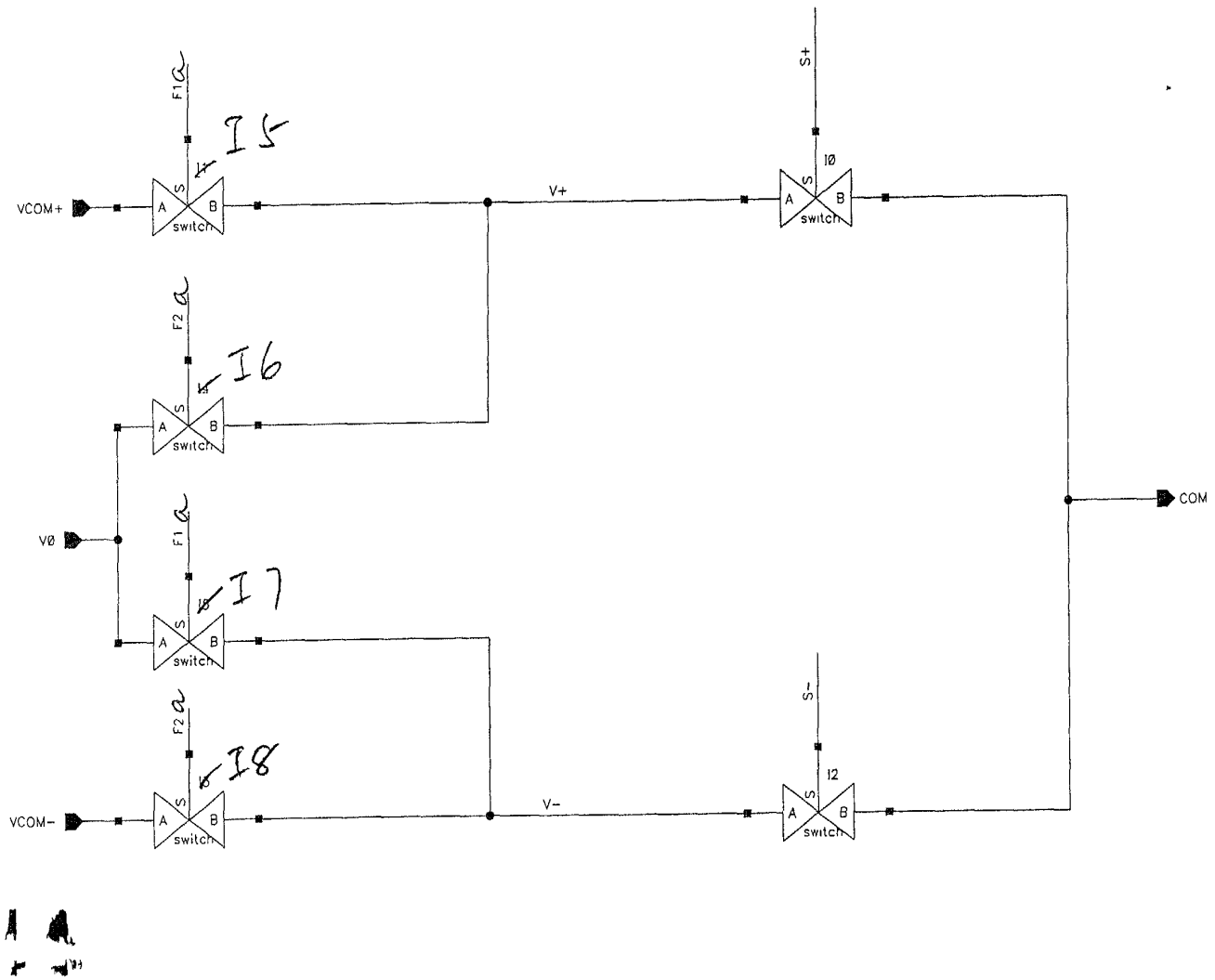



Fig. 3b

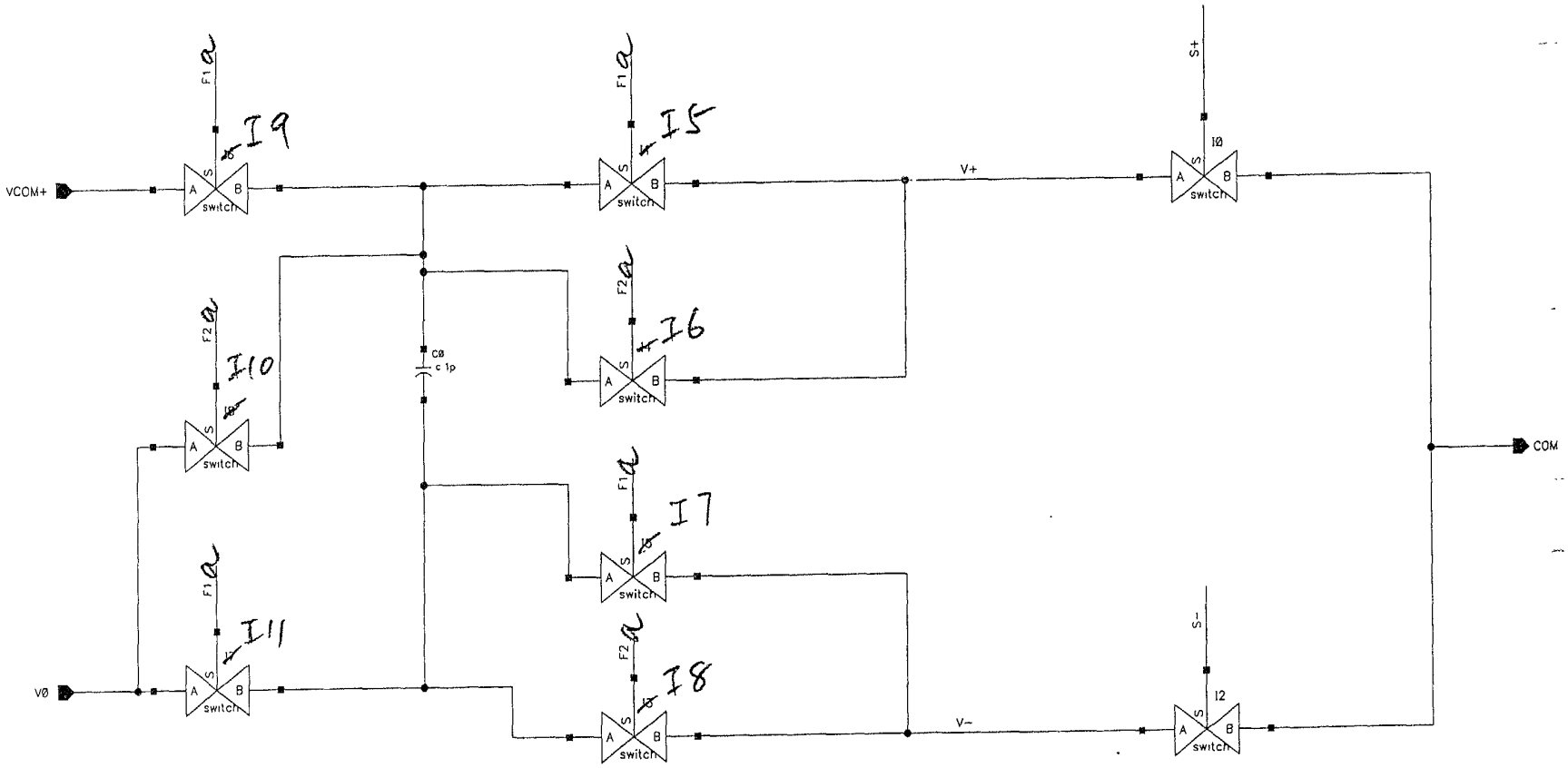

VCOM+
VØ
F1
F2
I9
I5
I10
I6
I7
I11
I8
I0
I2
S+
S-
V+
V-
CØ
c 1p
COM
switch
A
B
S

Fig. 3c

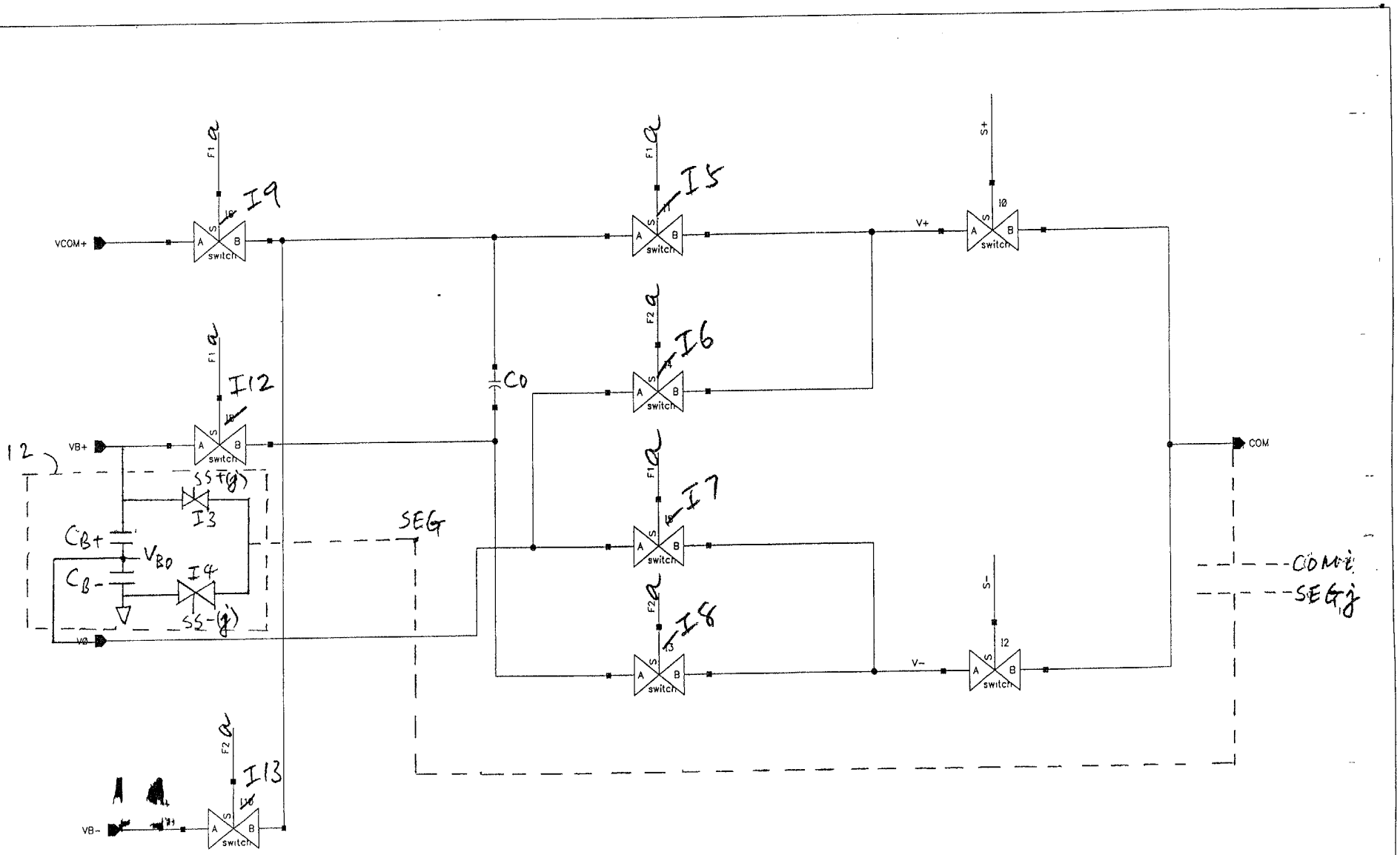

VCOM+
VB+
VB-
V+
V-
S+
S-
COM
SEG
CB+
CB-
VBO
C0
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10
I11
I12
I13
F1
F2
switch
A
B
S
SS+(j)
SS-(j)
COMi
SEGj

Fig. 3d

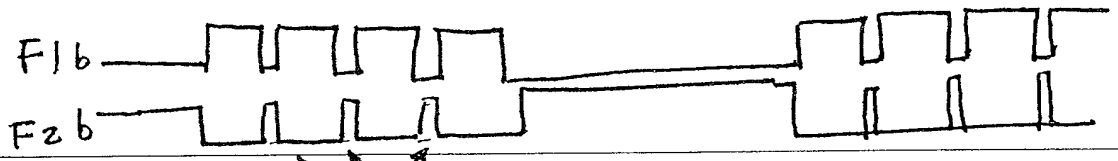



Fig 4c

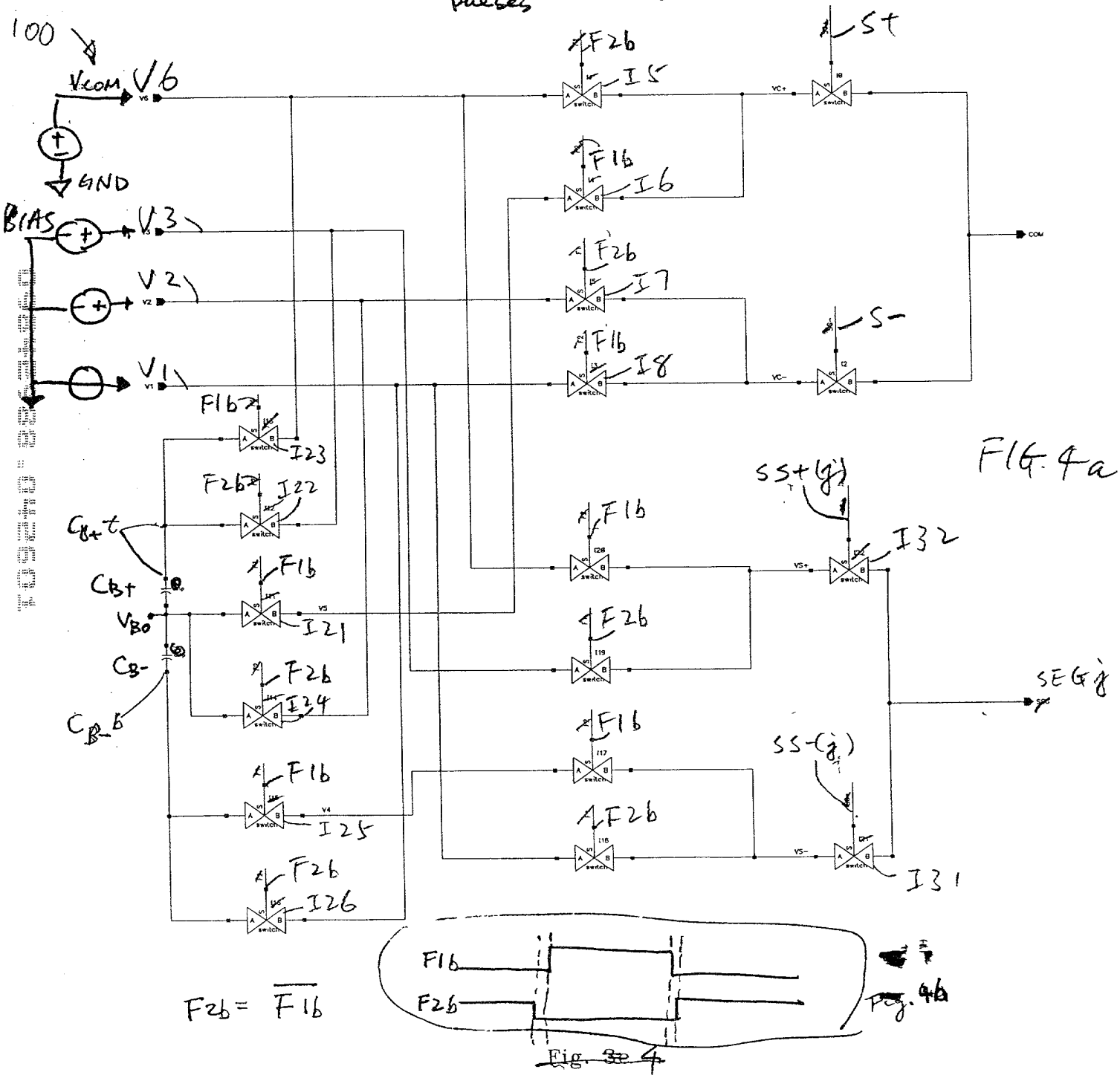



FIG. 4a




Fig. 4b

$F2b = \overline{F1b}$

Fig. ~~3c~~ 4

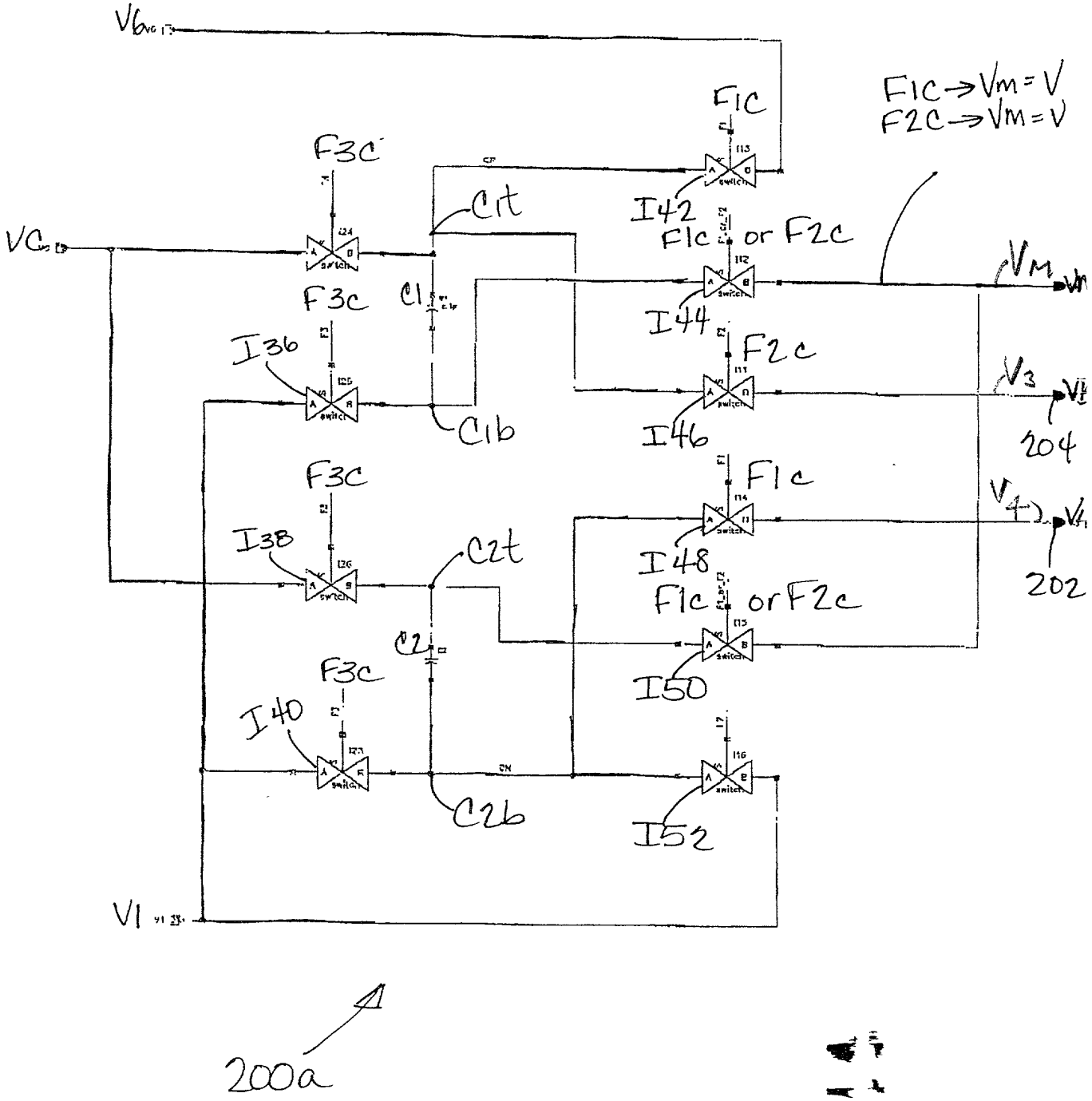

V6
F1C
F1C → Vm = V
F2C → Vm = V
F3C
I42
C1t
VC
F1c or F2c
Vm
F3C
C1
I44
I36
F2c
V3
C1b
I46
204
F3C
F1c
I48
V4
I38
C2t
202
F1c or F2c
C2
F3C
I50
I40
C2b
I52
V1
200a

Fig. 5a

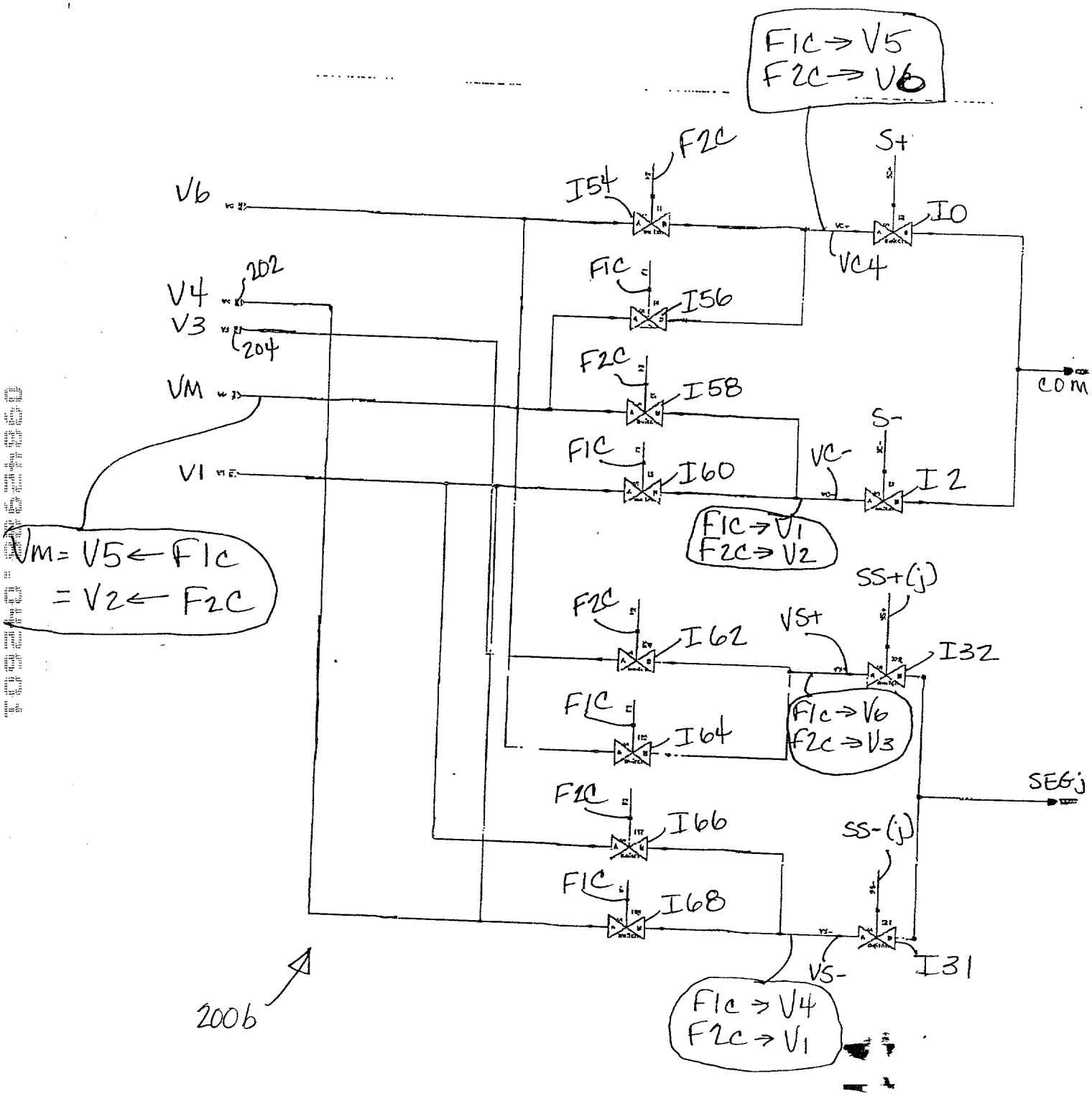

F1C → V5
F2C → V6
F2C
S+
I54
I0
V6
VC+
VC4
F1C
I56
202
V4
V3
204
F2C
I58
COM
VM
S-
F1C
I60
VC-
I2
V1
F1C → V1
F2C → V2
VM = V5 ← F1C
= V2 ← F2C
SS+(j)
F2C
I62
VS+
I32
F1C → V6
F2C → V3
F1C
I64
SEGj
F1C
I66
SS-(j)
F1C
I68
VS-
I31
F1C → V4
F2C → V1
200b

Fig. ~~3B~~ 5b

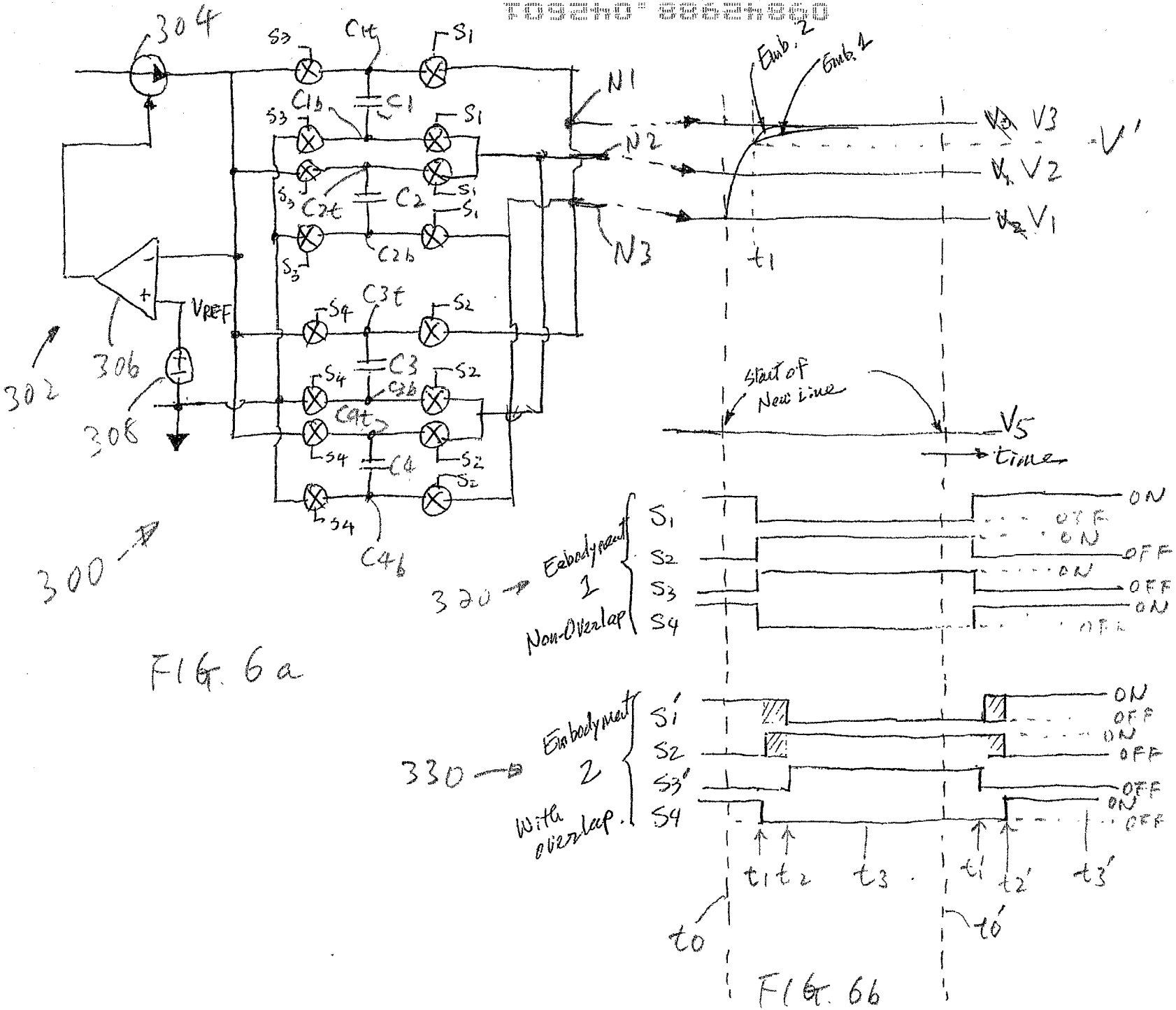



FIG. 6a

FIG. 6b